



SEA-BIRD
SCIENTIFIC

SBE Sea-Bird
Electronics

Sea-Bird Electronics
13431 NE 20th Street
Bellevue, Washington
98005 USA

Tel: +1 425-643-9866
seabird@seabird.com
www.seabird.com

SBE 41-CP ALACE

Instrument Configuration

Instrument Serial Number: 41-7283
Instrument Firmware Version: ALACE-CP V 3.0C
Zero Conductivity Frequency: 2566.15

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure	Kistler	4632626	2000m(2000 dBar)
RS232	Oxygen	SBE 63	63-1072	7000m

Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 7283
CALIBRATION DATE: 02-Jun-15

SBE 41 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

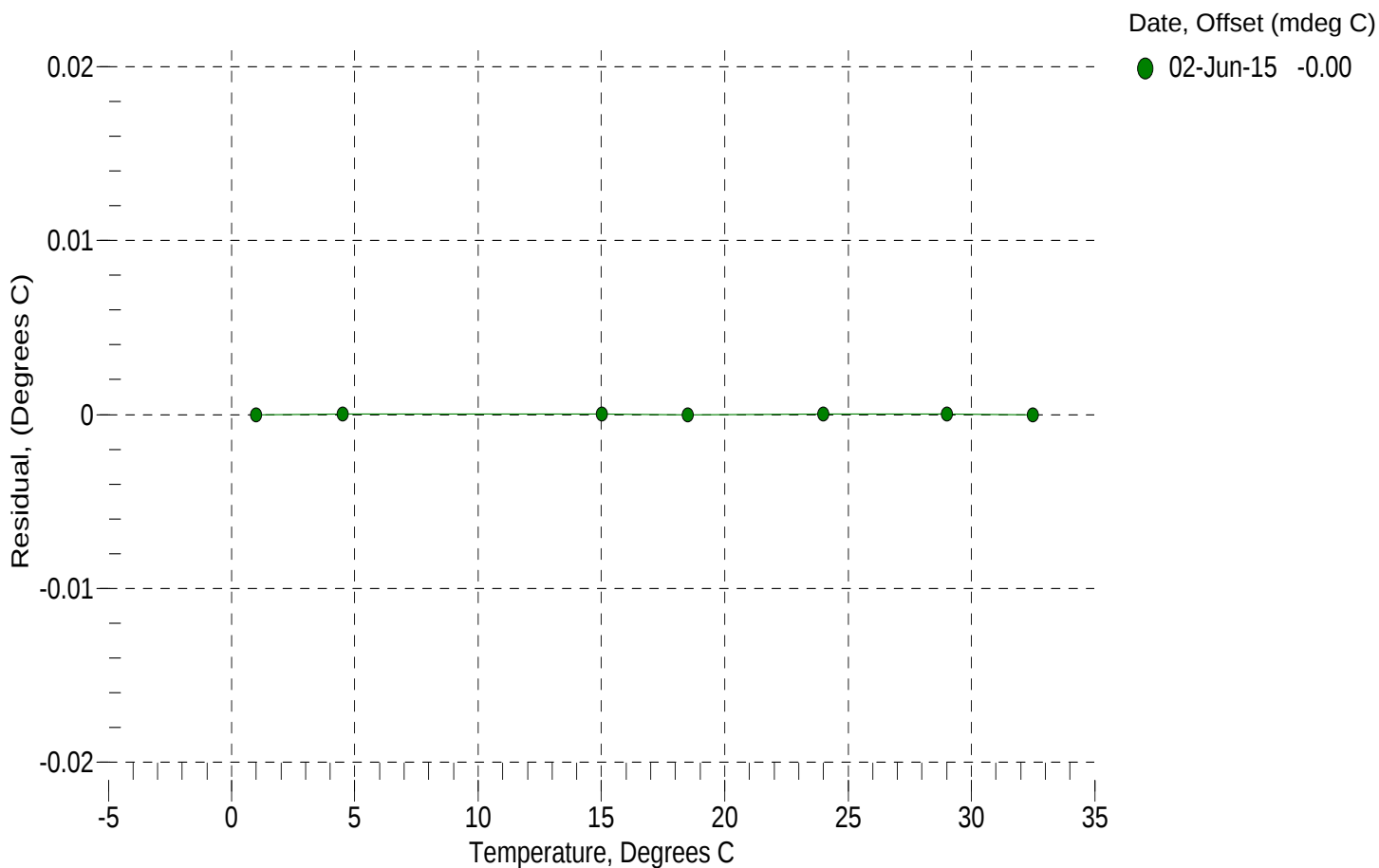
a0 = 5.782456e-005
a1 = 2.711679e-004
a2 = -2.239376e-006
a3 = 1.459084e-007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	676594.2	1.0000	-0.0000
4.5000	577184.7	4.5000	0.0000
15.0000	365464.2	15.0000	0.0000
18.5000	315799.0	18.5000	-0.0000
23.9940	252600.8	23.9940	0.0000
29.0000	207365.3	29.0000	0.0000
32.5000	181247.8	32.5000	-0.0000

Temperature ITS-90 = $1/\{a_0 + a_1[\ln(n)] + a_2[\ln^2(n)] + a_3[\ln^3(n)]\} - 273.15$ (°C)

Residual = instrument temperature - bath temperature

n = instrument output



Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 7283
CALIBRATION DATE: 02-Jun-15

SBE 41 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.816257e-001
h = 1.497211e-001
i = -3.827000e-004
j = 4.981900e-005

CPcor = -9.5700e-008
CTcor = 3.2500e-006
WBOTC = -3.2471e-008

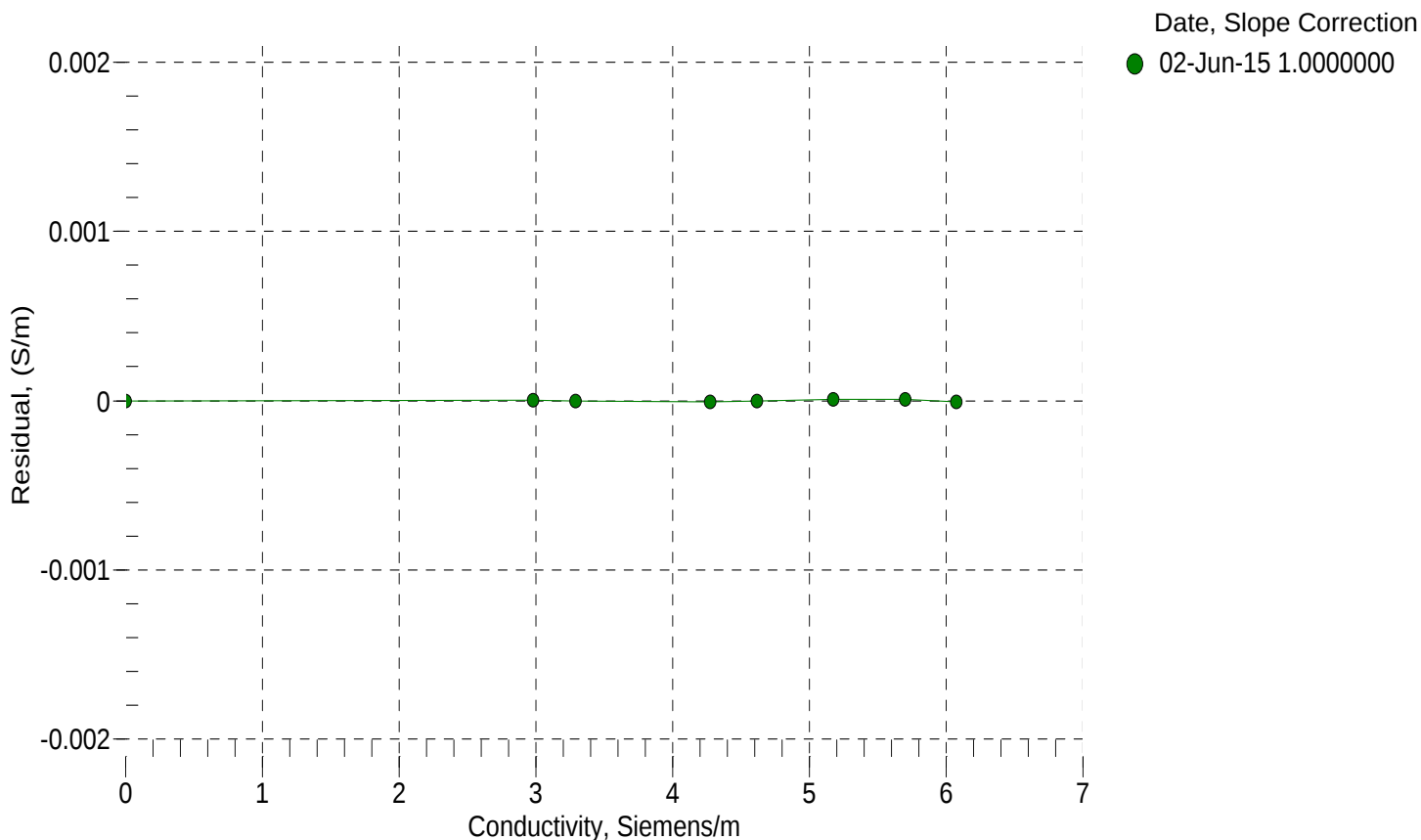
BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (Hz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
22.0000	0.0000	0.00000	2566.15	0.00000	0.00000
1.0000	34.9033	2.98269	5156.87	2.98270	0.00000
4.5000	34.8836	3.29045	5352.82	3.29045	-0.00000
15.0000	34.8413	4.27436	5935.32	4.27435	-0.00001
18.5000	34.8323	4.62026	6126.69	4.62026	-0.00000
23.9940	34.8224	5.17881	6423.38	5.17882	0.00001
29.0000	34.8168	5.70239	6689.22	5.70240	0.00001
32.5000	34.8131	6.07549	6872.18	6.07549	-0.00001

$f = \text{INST FREQ} * \sqrt{1.0 + \text{WBOTC} * t} / 1000.0$

Conductivity = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$ Siemens / meter

t = temperature[°C]; p = pressure[decibars]; δ = CTcor; ϵ = CPcor;

Residual = instrument conductivity - bath conductivity



Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, WA 98005-2010 USA

Phone: (+1) 425-643-9866 Fax (+1) 425-643-9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 7283
CALIBRATION DATE: 28-May-15

SBE 41 PRESSURE CALIBRATION DATA
2900 psia S/N 4632626

COEFFICIENTS:

PA0 = -2.381748e-001
PA1 = 1.402468e-001
PA2 = 8.683807e-009
PTHA0 = -9.708723e+001
PTHA1 = 4.088811e-002
PTHA2 = 9.724717e-007

PTCA0 = -1.559901e+002
PTCA1 = -6.389460e-001
PTCA2 = 2.546552e-002
PTCB0 = 1.028774e+002
PTCB1 = -8.037070e-003
PTCB2 = 0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FS
14.65	-51.0	2736.4	14.75	0.00
592.68	4061.3	2738.7	592.64	-0.00
1170.27	8170.5	2740.3	1170.39	0.00
1747.83	12276.6	2741.4	1748.01	0.01
2325.45	16380.4	2742.2	2325.60	0.01
2902.90	20479.1	2743.4	2902.77	-0.00
2325.36	16378.6	2744.0	2325.35	-0.00
1748.23	12278.1	2743.8	1748.22	-0.00
1170.11	8167.5	2744.2	1169.97	-0.00
592.45	4057.8	2744.6	592.14	-0.01
14.65	-50.8	2746.8	14.74	0.00

THERMAL CORRECTION

TEMP ITS90	PRESS TEMP	INST OUTPUT
32.50	2961.00	-37.14
29.00	2885.30	-40.78
23.99	2777.80	-44.16
18.50	2659.30	-46.44
15.00	2582.30	-47.28
4.50	2352.80	-45.78
1.00	2275.80	-44.09
TEMP(ITS90)		SPAN(mV)
-3.82		102.91
35.02		102.60

$y = \text{thermistor output}; t = \text{PTHA0} + \text{PTHA1} * y + \text{PTHA2} * y^2$

$x = \text{pressure output} - \text{PTCA0} - \text{PTCA1} * t - \text{PTCA2} * t^2$

$n = x * \text{PTCB0} / (\text{PTCB0} + \text{PTCB1} * t + \text{PTCB2} * t^2)$

$\text{pressure (psia)} = \text{PA0} + \text{PA1} * n + \text{PA2} * n^2$

